

**REMARKS/ARGUMENTS**

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the above amendments and following remarks, which place the application into condition for allowance.

**I. STATUS OF THE CLAIMS AND FORMAL MATTERS**

Claims 1-14 are pending in this application. By this Amendment, claims 1 and 9 are amended as outlined above, and claims 3-5 and 10 have been canceled, without prejudice without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents. Support for these amendments can be found throughout the Specification, for example, see U.S. Patent Application Publication No. 2002/0074168 ("the instant application") paragraphs [0034] and [0039]. No new subject matter is added.

**II. CLAIM OBJECTIONS**

On page 3 of the Office Action, claim 5 is objected to for reciting alternative limitations when one of the alternatives is already present. Claim 9 is objected to for lack of antecedent basis for "the substrate."

By this Amendment, as listed above, claim 5 is cancelled and claim 9 has been amended to provide proper antecedent basis for "a substrate."

Applicants' attorneys respectfully request withdrawal of the objections to claims 5 and 9.

### **III. THE REJECTIONS UNDER 35 U.S.C. § 112**

On page 3 of the Office Action, claim 3 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. As listed above, claim 3 has been cancelled by this Amendment.

Applicants' attorneys respectfully request withdrawal of the § 112 rejections in this application.

### **IV. THE REJECTIONS UNDER 35 U.S.C. § 102**

On page 4 of the Office Action, claims 1-5 and 10-13 are rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 5,979,571 to Scott *et al.* ("Scott").

Instantly amended claim 1 recites, inter alia,

a protective layer...wherein the protective layer forms a segment which is integrally formed with the substrate and is formed of the same material as the substrate adjacent the layer of ultra hard abrasive material.

As understood by Applicants' attorneys, the coating disclosed in Scott is not integrally formed with the substrate. The Office Action identifies the protective layer of Scott to be element 30. As recited in Scott, "a polycrystalline diamond body 24 is mounted to a tungsten carbide substrate 22, with a thin, durable coating 30 deposited over the diamond body 24. The primary purpose of using the coating embodiment is to place a chemically resistant coating over the diamond body." *Scott*, column 5, line 47-51. Scott further describes the suitable processes for depositing the protective coating on the diamond in column 58-64. Accordingly, the protective coating of Scott is a separate layer applied to the diamond body.

The Office Action points to Fig. 11 to illustrate the protective layer. In the figure, protective layer 30 is shown to be a separate layer protecting the diamond body. The protective

layer does not extend beyond the diamond body/substrate interface. Further, as Fig. 11 is a section view (*Scott*, column 3, lines 65-66) illustrating the protective layer, diamond body and the substrate in three separate and distinctly different cross hatch patterns, it is clear that the protective layer is not integrally formed with the substrate. The nature of the protective layer as a separate component is apparently recognized by the Examiner. The Office Action points to least to the following portions of *Scott* which recite, “wherein the protective layer is formed as a separate component” (Emphasis added.) (*Scott*, column 5, lines 47-50); “the protective layer is formed as a separate component and bonded to the top surface or side surface of the ultra-hard material” (Emphasis added.) (*Id.*, column 5, line 62+); and “the protective layer forms a segment which is bonded to the substrate.” (*Id.*, column 5, line 60+ and Fig. 11).

The Office Action also relies on Fig. 10 to show a protective layer integrally formed with the substrate and formed of the same material as the substrate. Applicants’ attorneys respectfully submit that the embodiment illustrated in Fig. 10 fails to show a protective layer. In contrast, what is shown, as recited in column 5, lines 37-44, is a cup shaped tungsten carbide layer formed around the periphery and one end of a polycrystalline diamond body. The side shoulder of the carbide cup is not a “segment” as recited in instant claim 1. There is no teaching of a protective layer, integrally formed or separately applied, in the figure or the associated text.

Accordingly, instantly amended claim 1 is not anticipated by *Scott*. Applicants’ attorneys respectfully request withdrawal of the § 102 rejections.

**V. THE REJECTIONS UNDER 35 U.S.C. § 103**

Claims 9 and 11-13 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Scott in view of U.S. Patent Application Publication No. 2002/0074168 to Matthias (“Matthias”).

Instant amended claim 9 recites, inter alia:

A tool insert comprising:  
a layer of ultra-hard abrasive material bonded to a substrate...; and  
a protective layer formed of the same type of material as the substrate but of a different grade to that of the substrate, or of tool steel or of another suitable material dependent on the first substance, a surface of the protective layer being bonded to the sides surface of the ultra-hard abrasive material so as to protect the primary cutting edge thereof...

(Emphasis added.) Therefore, instant claim 9 is directed to a tool insert with alternating regions of substrate and ultra-hard abrasive material.

In contrast, Matthias discloses a cutter with alternating regions of polycrystalline diamond (PCD) of different wear resistances achieved by manipulating the thermal stability of the PCD. Accordingly, the entire cutting surface disclosed in Matthias is comprised of PCD. Because Matthias is directed to a wholly PCD cutting surface, the cutter disclosed would be unsuitable for milling or drilling through ferrous substrates, such as steel. (See *Instant Application*, paragraphs [0002] and [0004]). As disclosed in the *Instant Application*, at least in paragraphs [0005] – [0008], this instant invention is directed to a tool insert suitable for drilling through a first material, such as a steel lining of a borehole, and then through a second material, such as a rock bed. To achieve this, a protective layer is applied over a primary cutting surface, the protective layer selected to provide a secondary cutting edge sufficient for drilling through

the first substance. Once through the first substance, the protective layer exposes the primary cutting surface to drill or mill the second substance.

Because the cutting surface of Matthias is unsuitable for the drilling operation addressed by the instant invention, it would not have been obvious to one of ordinary skill in the art to modify Scott with the alternating strips of Matthias. Furthermore, if Scott was modified by the teaching of Matthias, the instant invention of alternating regions of ultra-hard abrasive material and substrate would not result.

For at least the foregoing reasons, it is believed that revised independent claims 1 and 9 patentably distinguish over the relied upon portions of Scott and Matthias, either alone or in combination, and are therefore allowable. Further, claim 2, which depends from claim 1, and claim 11-13, which depends from 1 or 9, are allowable as well.


The Examiner has made of record, but not applied, U.S. Patent No. 5,370,717. The Applicant appreciates the Examiner's implicit finding that this document, whether considered alone or in combination with others, does not render the claims of the present invention unpatentable.

Statements appearing above with respect to the disclosures in the cited references represent the present opinions of the Applicants' undersigned attorney and, in the event that the Examiner disagrees with any such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the respective reference providing the basis for a contrary view.

**CONCLUSION**

In view of the foregoing, it is believed that all of the claims in this application are patentable over the prior art. Accordingly, Applicants' attorneys respectfully request that a timely Notice of Allowance be issued in this case.

Please charge any fees incurred by reason of this response and not paid herewith to Deposit Account No. 50-0320.

Respectfully submitted,  
FROMMER LAWRENCE & HAUG LLP  


By: \_\_\_\_\_

Ronald R. Santucci  
Reg. No. 28,988

(212) 588-0800 (Phone)  
(212) 588-0500 (Fax)